

The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

1.- 79. (cancelled)

80. (not entered)

81. (not entered)

82 (New) The method of claim 100, wherein a ratio of said level , for CALM1, of RNA encoded by said gene in said sample of said test individual to said levels of RNA encoded by said gene in said samples of said control individuals ranges from at least 13/1000 up to and including 25/1000.

83. (New) The method of claim 100, wherein a ratio of said level, for CALM1, of RNA encoded by said gene in said sample of step (a) to said levels of RNA encoded by said gene in said samples of said individuals not having osteoarthritis ranges from at least 13/1000 up to and including 32/1000.

84. (New) A method for detecting expression of a group of genes consisting of tumor necrosis factor alpha-induced protein (TNFAIP6), calmodulin 1 (CALM1), and laminin, gamma 1 (LAMC1) in a human test individual, said method comprising: for each gene of said group of genes, detecting RNA encoded by said gene in a cartilage sample of said test individual, using an oligonucleotide of predetermined sequence which is specific only for RNA encoded by said gene in said sample, and/or for cDNA complementary to RNA encoded by said gene in said sample.

85. (New) The method of claim 84, wherein said detecting of said RNA comprises producing an amplification product from RNA encoded by said gene in said cartilage sample of said test individual, using primers specific only for RNA encoded by said gene in said sample, and/or for cDNA complementary to RNA encoded by said gene in said sample.

86 (New) The method of claim 84 or claim 85, further comprising quantifying a level of RNA encoded by said gene in said sample.

87. (New) The method of claim 86, further comprising comparing said level of RNA to a quantified level of control RNA encoded by said gene in cartilage samples of control individuals.
88. (New) The method of claim 87, wherein said control individuals are selected from the group consisting of: individuals classified as healthy individuals and individuals classified as having osteoarthritis.
89. (New) The method of claim 88, wherein said control individuals are classified as healthy individuals.
90. (New) The method of claim 89, further comprising classifying said test individual as being a candidate for having osteoarthritis if, for TNFAIP6 and CALM1, said level of RNA encoded by said gene in said cartilage sample of said human test individual is higher than that of in said samples of said control individuals, and, for LAMC1, said level of RNA encoded by said gene in said cartilage sample of said human test individual is lower than in said samples of said control individuals.
91. (New) The method of claim 90, wherein said gene is differentially expressed in said cartilage sample of said human test individual relative to said samples of said control individuals with a p value of < 0.05 .
92. (New) A method of screening a human test individual for being a candidate for having osteoarthritis, comprising, for each gene selected from a group of genes consisting of tumor necrosis factor alpha-induced protein (TNFAIP6), calmodulin 1 (CALM), and laminin, gamma 1 (LAMC1);
- (a) detecting RNA encoded by said gene in a cartilage sample of said test individual using an oligonucleotide of predetermined sequence which is specific only for RNA encoded by said gene in said sample, and/or for cDNA complementary to RNA encoded by said gene in said sample; and

- (b) quantifying a level of RNA encoded by said gene detected in step (a); and
- (c) comparing said level of RNA quantified in step (b) to a quantified level of control RNA encoded by said gene in cartilage samples of control individuals classified as healthy individuals;

wherein said test individual is a candidate for having osteoarthritis if, for TNFAIP6 and CALM1, said level of RNA encoded by said gene in said cartilage sample of said human test individual is higher than in said samples of said control individuals classified as healthy individuals with a p value < 0.05 , and, for LAMC1, said level of RNA encoded by said gene in said cartilage sample of said human test individual is lower than in said samples of said control individuals classified as healthy individuals with a p value < 0.05 .

93. (New) A method of identifying a gene as a candidate biomarker for osteoarthritis in a human test individual, comprising, for each gene of a group of genes consisting of tumor necrosis factor alpha-induced protein (TNFAIP6), calmodulin 1 (CALM1), and laminin, gamma 1 (LAMC1);

- (a) detecting RNA encoded by said gene in cartilage samples of control human individuals diagnosed as having osteoarthritis, using an oligonucleotide of predetermined sequence which is specific only for RNA encoded by said gene in said sample, and/or for cDNA complementary to RNA encoded by said gene in said sample; and
- (b) quantifying a level of RNA encoded by said gene detected in step (a); and
- (c) comparing said level of RNA quantified in step (b) to a quantified level of control RNA encoded by said gene in cartilage samples of healthy control individuals;

wherein said gene is a candidate biomarker for osteoarthritis in a human individual if, for TNFAIP6 and CALM1, said level of RNA encoded by said gene in said cartilage samples of said human individuals diagnosed as having osteoarthritis is higher than that of said healthy individuals with a p value < 0.05 , and wherein, for LAMC1, said gene is a candidate biomarker for osteoarthritis in a human individual if said level of RNA encoded by said gene in said cartilage samples of said human individuals diagnosed as having osteoarthritis is lower than that of said healthy individuals with a p value < 0.05 .

94. (New) The method of claim 93, wherein said quantifying of said level of RNA encoded by said gene is effected by:

- (i) quantifying said level of RNA relative to a housekeeping gene; or
- (ii) quantification of cDNA complementary to RNA encoded by said gene; or
- (iii) using quantitative PCR; or
- (iv) using an array.

95. (New) A method of classifying expression of a group of genes consisting of tumor necrosis factor alpha-induced protein (TNFAIP6), calmodulin 1 (CALM1), and laminin, gamma 1 (LAMC1) in a human test individual, said method comprising, for each gene of said group of genes:

- (a) quantifying a level of RNA encoded by said gene in a cartilage sample of said test individual;
- (b) comparing said level of step (a) with quantified levels of RNA encoded by said gene in cartilage samples of control individuals classified as having osteoarthritis; and
- (c) comparing said level of step (a) with quantified levels of RNA encoded by said gene in cartilage samples of control individuals classified as healthy individuals;

wherein a determination from steps (b) and (c) that said level of step (a) is: (i) statistically similar to said levels in said samples of said individuals classified as having osteoarthritis; (ii) statistically higher for TNFAIP6 and CALM1 relative to said levels in said samples of said individuals classified as healthy individuals; and (iii) statistically lower for LAMC1 relative to said levels in said samples of said individuals classified as healthy individuals, results in a classification of expression of said group of genes in said test individual with that of said individuals classified as having osteoarthritis, and

wherein a determination from steps (b) and (c) that said level of step (a) is: (1) statistically lower for TNFAIP6 and CALM1 relative to said levels in said samples of said individuals classified as having osteoarthritis; (2) statistically higher for LAMC1 relative to said levels in said samples of said individuals classified as having osteoarthritis; and is (3) statistically similar to said levels in said samples of said individuals classified as healthy individuals, results in a classification of expression of said group of genes in said test individual with that of said individuals classified as healthy individuals.

96. (New) The method of claim 95, wherein said quantifying of said level of RNA encoded by said gene is effected by quantifying said level of RNA relative to a housekeeping gene.
97. (New) The method of claim 95, wherein said quantifying of said level of RNA encoded by said gene is effected by quantification of cDNA complementary to RNA encoded by said gene.
98. (New) The method of claim 95, wherein said quantifying of said level of RNA encoded by said gene is effected using PCR.
99. (New) The method of claim 95, wherein said quantifying of said level of RNA encoded by said gene is effected using an array.
100. (New) A method of diagnosing osteoarthritis in a human test individual suspected of having or being afflicted with osteoarthritis, said method comprising:
- for each gene of a group of genes consisting of tumor necrosis factor alpha-induced protein (TNFAIP6); calmodulin 1 (CALM1); and laminin, gamma 1 (LAMC1):
- (a) determining a level of RNA encoded by said gene in a cartilage sample of said test individual; and
- (b) comparing said level with levels of RNA encoded by said gene in cartilage samples of control individuals not having osteoarthritis, wherein a determination from step (b) that said gene has statistically significant differential expression between said sample of said test individual and said samples of said control individuals is indicative of osteoarthritis in said test individual, said differential expression consisting, for TNFAIP6 and CALM1, of an increase in expression in said sample of said test individual compared to said samples of said control individuals, and, for LAMC1, of a decrease in expression in said sample of said test individual compared to said samples of said control individuals.

101. (New) The method of claim 100, further comprising the step of isolating RNA from said cartilage sample of said test individual.
102. (New) The method of claim 100, wherein said determining of said levels of RNA encoded by said gene in said cartilage sample of said test individual, comprises hybridizing a nucleic acid sample from said cartilage sample to an array comprising a substrate and a plurality of nucleic acid members, wherein each nucleic acid member is attached to a distinct addressable location on said substrate, and wherein hybridization of said nucleic acid sample to said nucleic acid members results in a determination of said level of said RNA transcripts.